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# **OC192**

Optical carrier multirate interface for up to OC192 (STM64) / 10GbE



#### Features

Mezzanine board – pairs with an EDT main board (PCI or PCIe), which adds DMA, programmable FPGA resources, and memory

Port 0: One optional SFP for 1GbE (electrical or optical), OTU1, or OC3/12/48 (STM1/4/16); optical signals can be 1550, 1310, or 850 nm

Port 1: One XFP for 10GbE (electrical or optical), OTU2/2e, or OC192 (STM64); optical signals can be 1550, 1310, or 850 nm

FPGA: One programmable Xilinx Virtex 4 LX XC4VLX40

DRAM: 4 GB (DDR2) for snapshot recording and data buffering

#### Description

The OC192 is a dual-port mezzanine board that pairs with a PCI / PCIe main board to support multiple standards.

Port 0 provides an optional SFP for 1GbE (optical or electrical), OTU1, or OC3/12/48 (STM1/4/16). Port 1 provides an XFP for 10GbE (optical or electrical), OTU2/2e, or OC192 (STM64).

The board has one programmable Xilinx Virtex 4 FPGA and 4 GB of DDR2 DRAM for snapshot recording and buffering.

EDT provides FPGA configuration files to support 1GbE and 10GbE (at the PHY layer); OC3/12/48/192 (raw, framed, framed and descrambled, header, and payload); OTU1/2/2e (raw, framed, framed and descrambled); and demultiplexing. Custom files can be requested.

The main board supplies DMA, plus additional memory and programmable FPGA resources.

## Applications

Telecommunications network monitoring Ethernet monitoring SONET/SDH to ethernet conversion

| Product Type        | Optical carrier multi-rate interface for up to OC192 (STM64) / 10GbE; it requires an EDT PCI / PCIe main board.   |   |  |   |  |
|---------------------|---|---|--|---|--|
| FPGA Resources      | One programmable FPGA (Xilinx Virtex 4 LX XC4VLX40), plus FPGA resources on main board  |   |  |   |  |
| Memory              | DRAM (DDR2)   |   | 4 GB for snapshot recording and buffering  |   |  |
| Clocks (XO)         | Port 0 can be set to:<br>Port 1 can be set to:  |   | 125, 155.52, 156.25, or 166.62857 MHz<br>125, 155.52, 156.25, 166.62857, 161.13281, 167.33165, or 173.37075 MHz  |   |  |
| Data Rates          | Dependent on such factors as data format, main board, and system variables.   |   |  |   |  |
| Data Format (1/0)   | Port 0:<br>Port 1:  | <b>1GbE<br/>(optical or electrical)</b><br>1000 BASE-T or -X<br>– | <b>10GbE</b><br>(optical or electrical)<br>–<br>10G BASE-CX4 or -R   | <b>ITU-T G.709</b><br>(optical)<br>OTU1<br>OTU2/2e  | <b>SONET (SDH)</b><br>(optical)<br>0C3/12/48 (STM1/4/1<br>0C192 (STM64)  |
| Transceivers        | Two (port 0 has an optional SFP, while port 1 has an included XFP) are available, supporting data as shown below.   |   |  |   |  |
|                     | Port O  | ELECTRICAL  | OPTICAL<br>1GbE, OTU1, or  |   |  |
|                     | <u>(I SFP, optional)</u>  | IGDE  | <u>UC3/12/48 (STM1/4/16)</u><br>1550 pm  | 1210 pm   | 950 nm   |
|                     | Output power<br>Center wavelength<br>Sensitivity<br>Maximum input power<br>Connector<br>Port 1<br>(1 XFP, included)<br>Output power<br>Center wavelength<br>Sensitivity | -<br>-<br>-<br>RJ45<br><b>10GbE</b><br>-<br>-                     | -2 to 3 dBm<br>-2 to 3 dBm<br>1500 to 1580 nm<br>-28 dBm<br>-9 dBm<br>LC<br><b>10GbE, OTU2/2e, or</b><br><u>OC192 (STM64)</u><br><b>1550 nm</b><br>-1 to 2 dBm<br>1550 nm<br>-15 dBm | -9.5 to -3 dBm<br>1270 to 1360 nm<br>-18 dBm<br>0 dBm<br>LC<br><b>1310 nm</b><br>-6 to -1 dBm<br>1290 to 1330 nm<br>-13 dBm | -9 to -2.5 dBm<br>830 to 860 nm<br>-18 dBm<br>0 dBm<br>LC<br><b>850 nm</b><br>-3 to -1 dBm<br>850 nm<br>-7.5 dBm |
|                     | Maximum input power   | -<br>CV4  | -1 dBm   | -0.5 dBm  | -1 dBm   |
| Connectors          | One RJ45. LC. or CX4 on each transceiver as shown above   |   |  |   |  |
| Cahling             | Consult FDT for purchase ontions  |   |  |   |  |
| Physical            | Weight<br>Dimensions  |   | 6.5 oz. typical<br>6.6 x 4.2 x 0.75 in. (with a main board)  |   |  |
| Environmental       | Temperature (operating / non-operating)<br>Humidity (operating / non-operating)   |   | 0° to 40° C / -40° to 70° C<br>1% to 90%, non-condensing at 40° C / 95%, non-condensing at 45° C   |   |  |
| System and Software | For details on system requirements and EDT-provided software driver packages, see specifications for your EDT main board.   |   |  |   |  |

### Ordering Options

- Main board: PCI GS or PCIe8 LX / FX / SX - Transceivers: 1 or 2 [options above]

**Bold** is default. For more options, see main board detail. **Ask** about custom options.

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